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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,573

07/07/2005

Shigeyuki Hatori

TKI-006

7813

20374 7590 02/20/2008
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EXAMINER

LEE, GILBERT Y

ART UNIT

PAPER NUMBER

3673

MAIL DATE

DELIVERY MODE

02/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,573	Applicant(s) HATORI, SHIGEYUKI	
	Examiner GILBERT Y. LEE	Art Unit 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/22/08 has been entered.

Claim Objections

2. The preamble of an independent claim should comprise a general description of all the elements or steps of the claimed combination, which are conventional or known, a phrase such as "wherein the improvement comprises," and those elements, steps and/or relationships that constitute that portion of the claimed combination which the applicant considers as the new or improved portion.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the converging portion" in claim 1, page 3, line 9. There is insufficient antecedent basis for this limitation in the claim. For the purposes of this examination, the examiner is interpreting "converging portion" to mean "the concave portion".

Claim 1 also recites the limitation "the innermost points of the columnar portion" in claim 1, page 3, line 10. It is unclear to the examiner as to what the innermost points are in reference to (i.e. innermost to the right and left ends of the columns of Fig. 2, innermost with respect to the outer circumference of the columnar portion).

Claims 2-8 are rejected for depending upon a rejected claim.

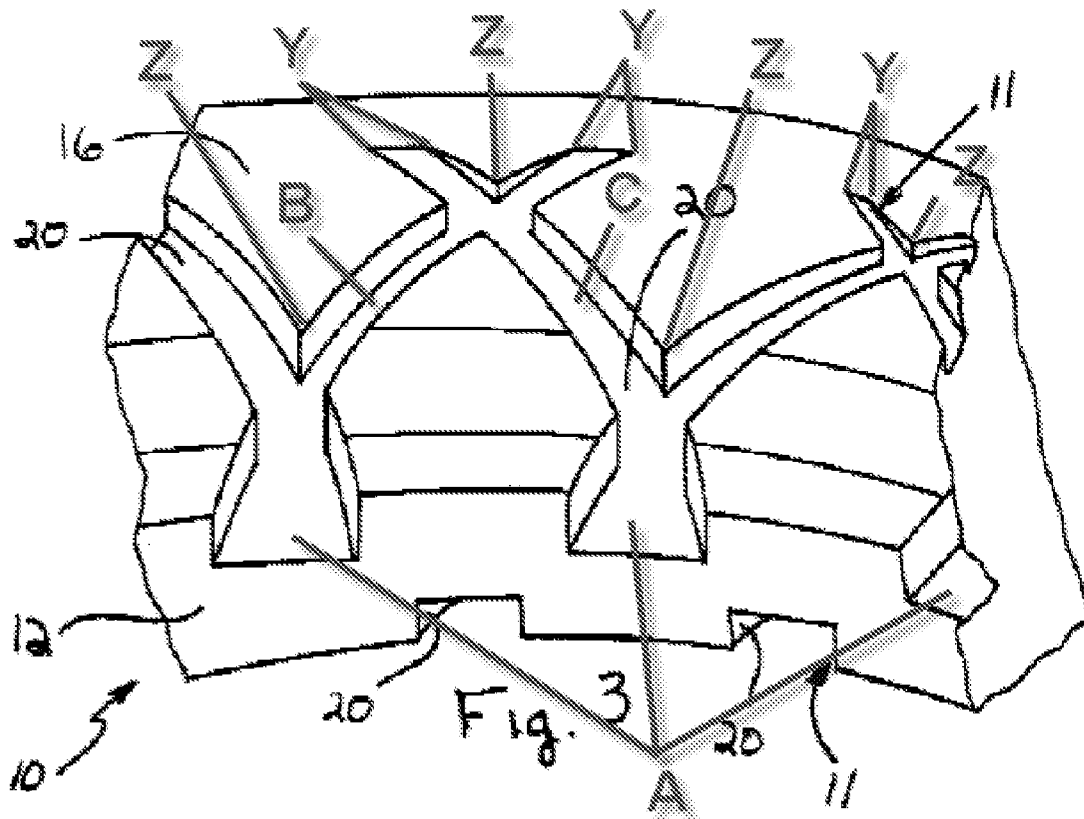
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Note for reference character A-C, Y and Z, refer to the following:



1. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Dickey et al. (US Patent No. 6,189,896).

Regarding claim 1, the Dickey et al. reference, as best understood, discloses a seal ring (10) wherein

a plurality of circumferentially extending concaves (20) being provided along an inner circumferential part of the contact side face (Fig. 3) and separated from each other along the circumference of the side face by columnar surfaces (e.g. Z),

each end of each of said plurality of circumferentially extending concaves converges with a surface of the side face to form a converging point (Y), adjacent converging points being separated from each other by said columnar surface (Fig. 3),

each of said columnar surfaces extending radially outwardly from a line extending between adjacent converging points to an outer circumferential edge of the side face (Fig. 3),

each of the concaves being formed by a first deepest inclined portion (e.g. portion at A) provided in the inner circumferential part of the side face of the seal ring, the first deepest inclined portion being provided to reduce a thickness of the seal ring toward an inner circumference of the seal ring (Fig. 3), and

a second inclined portion (e.g. B and C) being provided on an inner circumferential side of each columnar surface and extending radially inwardly from said line extending between adjacent converging points to the inner circumferential edge of the side face of the seal ring to reduce the thickness of the seal ring toward the inner circumference of the seal ring (Fig. 2), the converging portion converging toward the innermost points of the column portion (i.e. starting from Y and moving down, the concave portions converge to Z).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-8, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey et al.

Regarding claim 2, the Dickey et al. reference discloses the invention substantially as claimed in claim 1, including the dimension between an outermost point of the first deepest inclined portion in the radial direction and the outer circumferential face of the seal ring being 0.4 mm or larger (Col. 3, Lines 39-47) and being equal to or smaller than $2/3$ of the thickness of the seal ring (Fig. 2).

However, the Dickey et al. reference fails to explicitly disclose the inclination angle of the first deepest inclined portion.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an inclination angle of the first deepest inclined portion be in the range of 8° to 45° as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

Regarding claims 3 and 5, the modified Dickey et al. reference discloses the invention substantially as claimed in claims 1 and 2.

However, the modified Dickey et al. reference fails to explicitly disclose the inclination of the second inclined portion and a dimension of the second inclined portion in the radial direction.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a

mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an inclination angle of the second inclined portion be in the range of 8° to 45° and a dimension of the second inclined portion in the radial direction being in the range from $1/5$ to $1/2$ of a dimension from the inner circumference of the seal ring to an outermost point of the first deepest inclined portion in the radial direction as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

Regarding claims 4 and 6-8, the modified Dickey et al. reference discloses the invention substantially as claimed in claims 1, 2, 3, and 5 respectively.

However, the modified Dickey et al. reference fails to explicitly disclose a width of the first deepest inclined portion and a width of the second inclined portion.

Discovering an optimum range of a result effective variable involves only routine skill in the art. Without the showing of some unexpected result. Since applicant has not shown some unexpected result the inclusion of this limitation is considered to be a mechanical expedient. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a width of the first deepest inclined portion in the circumferential direction being 8 to 50 times as large as a width of the second inclined portion in the circumferential direction as a matter of mechanical expedience and to control the amount of leakage past the axial faces (Col. 3, Lines 39-42).

Response to Arguments

Art Unit: 3673

3. Applicant's arguments filed 1/22/08 have been fully considered but they are not persuasive.

With regards to the applicant's argument of the converging portion, the argument is not persuasive because the claim requires "the converging portion" to converge toward innermost points of the column surface; the claim does not require "a converging point" to converge toward innermost points of the column surface.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GILBERT Y. LEE whose telephone number is (571)272-5894. The examiner can normally be reached on 8:00 - 4:30, M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patricia L. Engle can be reached on (571)272-6660. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3673

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patricia L Engle/
Supervisory Patent Examiner, Art
Unit 3673

/G. Y. L./
Examiner, Art Unit 3673

<div>Application Number</div> <div></div>	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/541,573	HATORI, SHIGEYUKI	
	Examiner	Art Unit	
	GILBERT Y. LEE	3673	